SERVICE MANUAL



US Model Canadian Model

> AEP Model **UK Model** E Model

> > D-Z555

Model Name Using Similar Mechanism	D - 250
CD Mechanism Name	CDM - 555

SPECIFICATIONS

CD section

System Compact disc digital audio system

Laser diode properties Material: GaAlAs Wavelength: 780 nm

Emission duration: Continuous

Laser output: Less than 44.6 μW

This output is the value measured at a distance of 200 mm from the objective lens surface on

the Optical Pick-up Block.

Error correction

Sony Super Strategy Cross Interleave Reed Solomon Code 16-bit linear, 8fs digital filter D-A conversion

Frequency response 20 - 20,000 Hz ±1 dB*

Signal-to-noise ratio More than 90 dB

Wow and flutter Below measurable limit*

Outputs (at 9 V input level)

Line output (stereo minijack)

Output level 0.7 V rms at 50 kilohms

Load impedance over 10 kilohms

Optical digital output (optical output connector)
Output level: -21 — -15 dBm

Wavelength: 630 - 690 nm at peak level

Headphones (stereo miniiack) 9 mW + 9 mW at 32 ohms

* Measured by EIAJ CP-307

CAUTION

The use of optical instruments with this product will increase eye hazard.

For the Customers in the United Kingdom and European Countries



This Compact Disc player is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT label is located on the bottom exterior.

General

Power requirements

Supplied rechargeable battery pack (BP-2EX) or BP-100 (optional)

DC IN 9 V jack accepts:

Supplied AC power adaptor for use on 120V AC, 60 Hz Sony CPM-200P car mount plate (optional) or

Sony DCC-120A car battery cord (optional) for use on 12 V car battery

Power consumption 3.2 W DC

Approx. 127.6 \times 33 \times 145 mm (5 \times 15/16 \times 511/16 inches) (w/h/d) not incl. inclined part (depth), projecting parts and controls Approx. 130 \times 33.8 \times 145.5 mm (51/6 \times 15/16 \times 511/16 inches) Dimension

Weiaht

(w/h/d) incl. projecting parts and controls Approx. 520g (1.2lb) not incl. rechargeable battery Approx. 600g (1.5lb) incl. rechargeable battery (BP-2EX)

Supplied accessories AC power adaptor (1)
Rechargeable battery pack (1)

Carrying case (1) Connecting cord (1) (stereo miniplug - two phono plugs)

Design and specifications subject to change without notice

Notes on AC power adaptor

- . Disconnect the AC power adaptor when the unit will not be used
- Use only the supplied AC power adaptor or the recommended car battery cord manufactured by Sony. Polarity of the plugs of other manufacturers may be different.



Polarity of the Sony plug

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

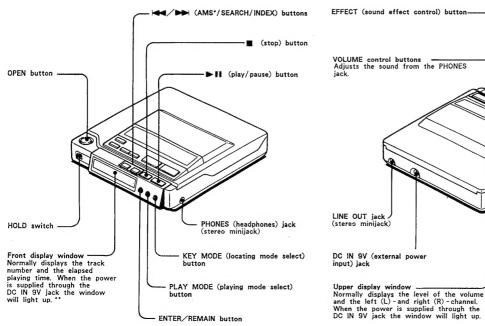
COMPACT DISC COMPACT PLAYER

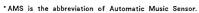
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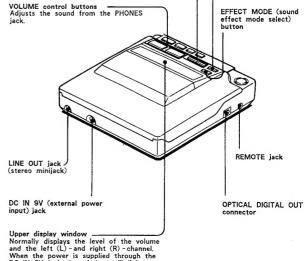
SECTION 1 GENERAL

Location and Function of Controls





^{**}If lit for a long time, the unit may become warm, but that is not a problem.



EQ (graphic equalizer band select button)

SERVICING NOTES

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.

During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.

Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron at 270° ± 10°C during repairing.
- 2. Do not touch the soldering iron more than 4 seconds or 3 times on the same conductor of the circuit board.
- 3. Do not apply force on the conductor when soldering or unsoldering.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Before Replacing the Optical Block

Please be sure to check thoroughly the parameters as par the "Optical Block Checking Procedures" (Part No.: 9-960-027-11) issued separately before replacing the optical block.

Note and specifications required to check are given below.

- FOK output: IC501 9 pin
 When checking FOK, remove the lead wire to disc
 motor and unsolder and open IC801 24 pin.
- S carve P-to-P value: 2.95 Vp-p
- Adjusted part for focus gain adjustment: RV505
- RF signal P-to-P value: 0.75 − 1.4 Vp-p
- Traverse signal P-to-P value: 1.8 Vp-p
- The grating holder can not repair.
- Adjusted part for tracking gain adjustment: RV501

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK A OR DOTTED LINE WITH MARK ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE A SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe, from more than 30 cm away from the objective lens.

Laser Diode Check Procedure

The laser diode on this set will not emit unless the top panel is closed and S901 (leaf SW type) is turned on. The laser diode will always emit even if focus search is not performed in service mode.

The laser diode is checked using the current value which flows to the laser diode inside the UPF.

Procedure 1 (service mode or normal operation) Check the laser diode emission with the eye.

- 1. Open upper panel.
- S901 on as Fig. 1.
 (In service mode, this operation is not necessary.)
- Press the ►II key.
 (In service mode, this operation is not necessary.)
- 4. Observe the objective lens and confirm that the laser diode is emitting light. At this time, the laser diode goes on about 10 seconds due to focus serarch. If it does not, APC circuit or UPF is defective.

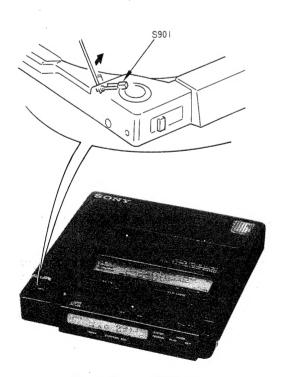
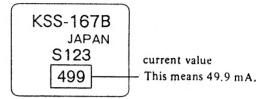


Fig. 1 Turning S901 on

Procedrue 2 (service mode or normal operation)

Check by the curent with flows in the laser diode.

- 1. Close the top panel.
- Remove the main board and read the current value on the label affixed to the UPF. (Label on UPF)



The current value varies with the set.

- 3. Connect a VOM as shown in Fig. 2.
- 4. Press the ▶ key.
- 5. Calculate the current by the VOM reading.
 VOM reading (V) ÷ 10 = current (A)
 ex. VOM reading = 0.49 V
 0.49 ÷ 10 = 0.049 (A) = 49 (mA)
- 6. Confirm that the ammeter reading is within the range given below.

value on label⁺⁵₁₁ mA (25°C) variation relative to temperature: 0.4 mA/°C

(Current increases when temperature rises and decreases when it drops.)

If the value is more than the range given, APC circuit has been defective or the laser diode has deteriorated. If it is less, APC circuit or UPF is defective.

- servo board -

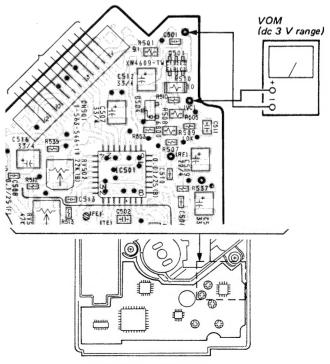


Fig. 2 VOM Connection

SERVICE MODE (service program)

This set has built-in service program in the micro-computer as usual sets.

The operation method of service program is explained below.

[servo all off]

[servo all off]

[servo all off]

[PLAY/PAUSE]

[FOCUS on and CLV-S

[mode (RUN-UP mode) on]

[UPF goes to outside]

circumference.

]: Main operation in service mode for details, refer to step 2.

KEY-MODE

sled servo on

[tracking servo and]

Be sure to set HOLD switch OFF.
If not key imputs can not be operated.

Fig. 3 Key Positions

UPF goes to inside

circumference.

 $\P\P(FR)$

Step 1 (Service Mode setting method)

- 1. Turn the HOLD switch OFF with the external power supply not plugged in (no power applied to set) and press the **bll** key.
- Solder jumper TEST point.
 (IC801 pin 9 (BAT-E) pin is grounded.
- 3. Plug in external power supply.

 This puts the set into service mode.

- main board -

HÓLD

OFF ↔ ON

REMAIN

[display stop]

Step 2 (Service Mode operation)

- When service mode is set, the display will change 6 times, and those 6 changes will be repeated over and over.
 With this the LCD display should be present
 - With this the LCD display should be present in service mode. Even if LCD does not display, other operations will be performed.
- When ▶► or ◄ key is pressed, the UPF moves to the inside or outside circumference. Tracking servo and sled servo go off when this is done, so press KEY-MODE to turn on the tracking servo if necessary.
- When REMAIN is pressed, the display stops.
 When REMAIN is released, the display continues to change. This allows check of each segment.
- 4. When > ll key is pressed, CLV-S (pull-in mode) starts while performing focus search. When there is no disc installed, focus search is repeated several times while disc motor is rotating.
- When KEY-MODE is pressed, tracking servo, sled servo and CLV-A (servo during PLAY) go ON
- When 4 and 5 are performed, the disc begins to play. At this time, the top panel should be closed and S901 are to be ON.
- All servo (focus, tracking, sled and spindle) go off when key is pressed. But disc motor continues rotating for a while by inartia.

Step 3 (Service Mode release)

- First be sure to unplug the external power supply, then remove the TEST point solder jumper.
- 2. The set will now operated normally.

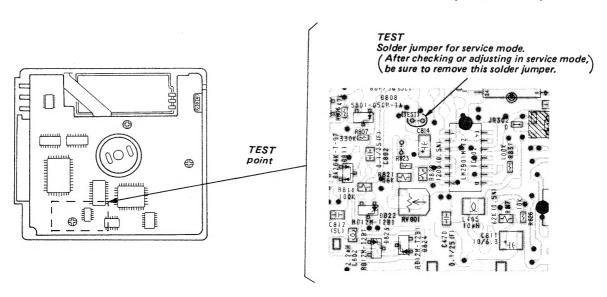


Fig. 4 TEST Point Position

SECTION 3 ELECTRICAL ADJUSTMENTS

Notes on Adjustment

1. Perform adjustments except for RECHARGEA-BLE VOLTAGE ADJUSTMENT and BATTERY DISPLAY ADJUSTMENT in service mode. Be sure to release service mode after completing adjustment.

(Refer to "Service Mode (service program)" on page 5.)

- 2. Perform adjustments in the order given.
- 3. Use YEDS-18 disc (part No.: 3-702-101-01) unless otherwise indicated.
- 4. Power supply voltage: DC 9 V HOLD switch: OFF

PREPARATION

Put the set into service mode (see page 5) and perform the following checks. Repair if there are any abnormalities.

• Sled Motor Check

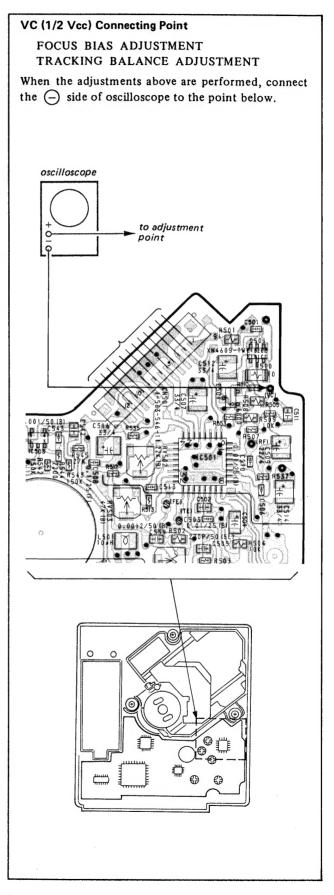
- 1. Press the OPEN button and open the top panel.
- 2. Press the ▶ , ◄ keys and make sure that the UPF moves smoothly, without catching, from the inmost → outmost → inmost circumference.

▶► : UPF moves outward ► : UPF moves inward

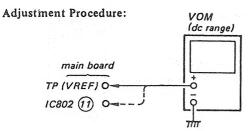
• Focus Search Check

- 1. Press the OPEN button and open the top panel.
- 2. Press the **III** key. (Focus search is performed continuously.)
- Observe the UPF objective lens and check that it moves smoothly up and down with no catching or noises.
- 4. Press the key.

Check that focus search operation stops. If it does not stop, press the key again longer than before. But disc motor continues rotating for a while by inartia.

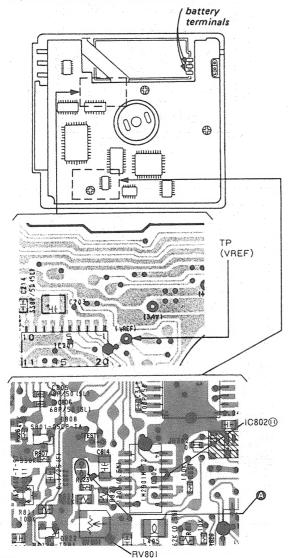


Battery Display Adjustment

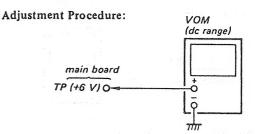


- 1. Apply dc +3.5 V to terminals for bult in battery (BP-2).
- 2. Insert the disc (YEDS-18) and put the set into play mode.
- 3. Adjust RV801 so that main board IC802 (1) voltage and TP (VREF) voltage are equal.
- 4. If IC802 (1) voltage is heigher than TP (VREF) voltage when turning the RV801 fully counter-clockwise, short the jumper point (A) as shown below and adjust RV801.

Adjustment Location: main board

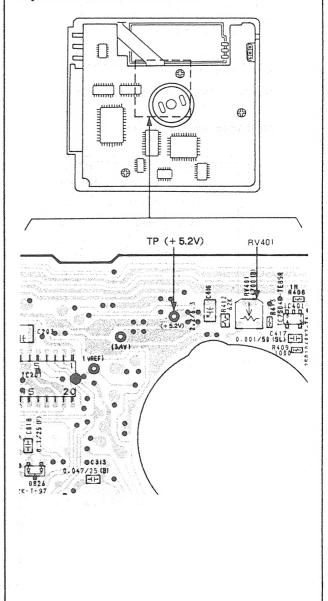


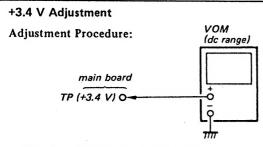
+ 5.2 V Adjustment



- 1. Put the set into service mode (see page 5).
- 2. Connect the VOM to main board TP (+ 5.2 V).
- 3. Adjust RV401 for $+5.2\pm0.1V$ reading on the VOM.
- 4. After adjustment, release service mode (see page 5).

Adjustment Location: main board





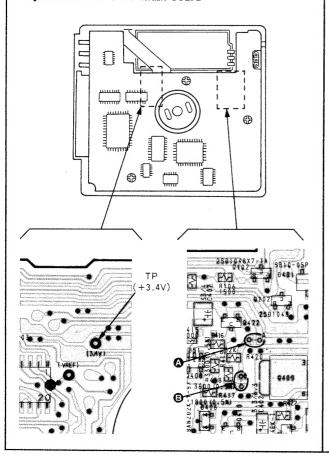
- 1. Put the set into service mode (see page 5).
- 2. Connect the VOM to main board test point TP (+3.4 V).
- 3. Adjust the pattern connecting (A or 3) to obtain 3.5 to 3.7 V reading on the VOM.

pattern c	onnection	VOM
Ø	3	VOM reading
0	×	down
×	×	†
×	0	
0	0	up

O: short X: open

4. After adjustment, release service mode (see page 5).

Adjustment Location: main board

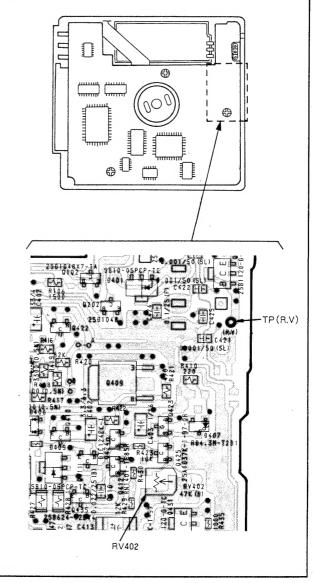


Rechargeable Voltage Adjustment Adjustment Procedure: WOM (dc range) TP (R. V) O

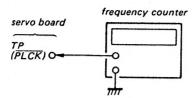
- 1. Connect the VOM to main board test point TP (R.V).
- 2. Apply DC 9 V with requrated dc power supply from external power jack CN401.
- 3. Adjust RV402 for 7.05 7.5 V reading on the VOM.

Note: Measure after the VOM reading becomes stable.

Adjustment Location: main board

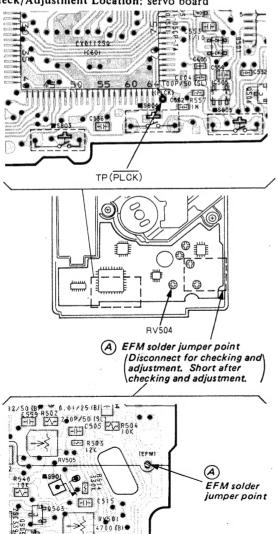


PLL Free Run Frequency Check and Adjustment Check/Adjustment Procedure:



- 1. Disconnect the jumper point (A) (EFM) in the diagram below.
- 2. Connect a frequency counter to servo board test point TP (PLCK).
- 3. Put the set into service mode (see page 5).
- 4. Check that the frequency counter reading is 4.310 ± 0.01 MHz. If not, adjust RV504 so that it is 4.310 ± 0.01 MHz.
- After adjustment, release service mode (see page 5).
- 6. Short the jumper point shorted in step 1.

Check/Adjustment Location: servo board



Tracking Balance Adjustment

Conditions:

The set should be placed either horizontally.

Adjustment Procedure:

servo board

TP

(TE) 0 + VC (1/2 Vcc) 0 - 0 -

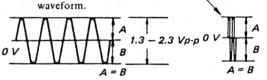
- 1. Connect the oscilloscope to servo board TP (TE).
- 2. Put the set into service mode (see page 5).

(See page 6.)

- Press the ▶► and I◄ keys to move the UPF to the center.
- 4. Insert the disc (YEDS-18) and close the top panel.
- 5. Press the **PII** key.

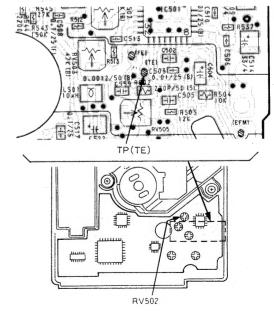
 (It will go from focus search to focus on, and CLV pull-in mode state. Tracking and sled are OFF.
- 6. Adjust RV502 so that the oscilloscope waveform is symmetrical on the top and bottom in relation to 0 V.

Note: Take sweep time as long as possible to obtain best



- 7. Unplug the external power supply to stop spindle motor from rotating.
- 8. After adjustment, release service mode (see page 5).

Adjustment Location: servo board

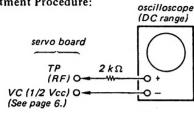


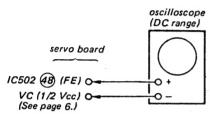
Focus Bias Adjustment

Conditions:

The set should be placed either horizontally.

Adjustment Procedure:



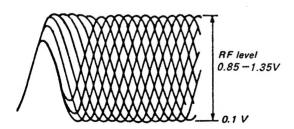


- 1. Put the set into service mode (see page 5).
- 2. Connect the oscilloscope to servo board test point
- 3. Press the ▶ and ► keys to move the UPF to the center. (Move the UPF to the music area on the disc to enable easy visibility of the eye pattern).
- 4. Insert the disc (YEDS-18) and close the top panel.
- 5. Press the ▶ key.

It will go from focus search to focus on, and CLV pull-in mode state. Tracking and sled are \OFF.

- 6. Press the KEY-MODE button. (Tracking and sled
- 7. Adjust RV503 so that the oscilloscope waveform eye pattern is good. A good eye pattern means that the diamond shape (0) in the center of the waveform can be clearly distinguished.
- RF Signal Reference Waveform (eye pattern)

VOLT/DIV: 200 mV TIME/DIV: 500 nS



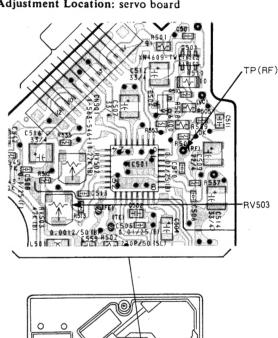
When observing the eye pattern, set the oscilloscope for AC range and raise vertical sensitivity.

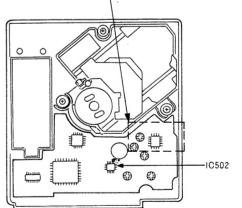
- 8. Push the (STOP) button spindle motor from rotating and remove the disc.
- 9. Remove the disc and connect the oscilloscope to main board IC502 (48) (FE).
- 10. Adjust RV503 again refering to the table followed.

oscilloscope reading	adjustment
more than + 70mV	Not adjust again.
+ 70mV to 0 mV	Adjust RV503 again for +70mV reading on oscilloscope.
0mV to -20 mV	Adjust RV503 again for -20 mV reading on oscilloscope.
less than -20 mV	Not adjust again.

11. After adjustment, release service mode (see page

Adjustment Location: servo board





Focus/Tracking Gain Adjustment

A frequency responce analyzer or CD jig is necessary in order to perform this adjustment exactly.

However, this gain has a margin, so even if it is slightly off, there is no problem. Therefore, do not perfrom this adjustment.

Focus/tracking gain determines the pick-up followup (vertical and horizontal) relative to mechanical noise and metchnical shock when the 2-axis device operate. However, as these reciprocate, the adjustment is at the point where both are satisfied.

- When gain is high, the noise when the 2-axis device operates increases.
- When gain is low, it is more susceptible to mechanical shock and skipping occurs more easily.

This adjustment is to be performed when replacing the following parts:

- optical pick-up block
- RV505 (focus gain VR)

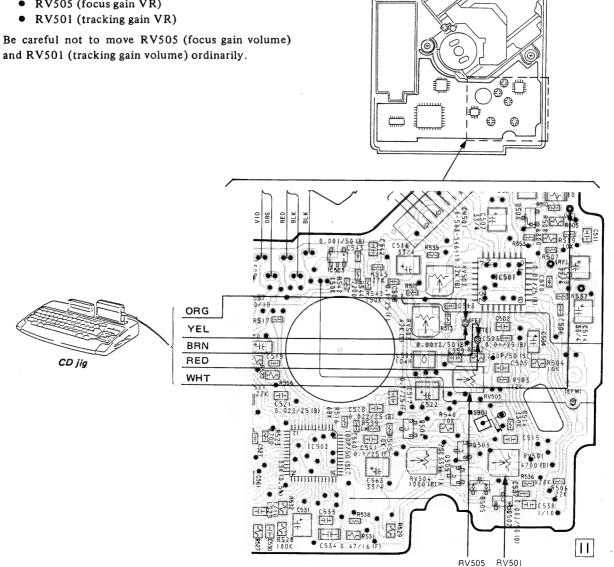
On this set, it is very difficult to simplify this adjustment. For those sets on which symptoms such as "occasional skipping" are hard to discover, or it is hard to tell if the set has been repaired, use the CD jig and perform this adjustment. Refer to the diagram below for connection of the CD jig. The adjustment procedure is described in the separate CD Jig Instruction Manual.

CD Jig Connecting Procedure:

Remove the solder jumpers at the TE and FE locations and connect the DC jig.

(Connect the points on both TE and FE located on the side of IC501 to the output to the CD jig, and points located on the side of volumes to the input from the CD jig.)

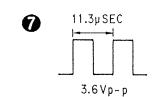
- servo board -

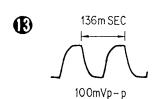


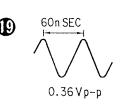
SECTION 4 DIAGRAMS

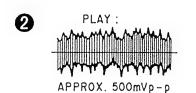
4-1. WAVEFORMS

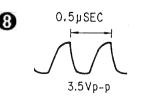


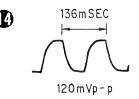


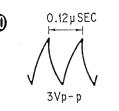


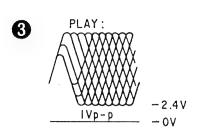


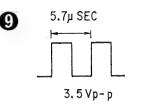


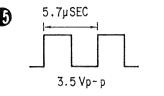


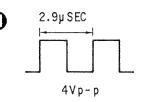


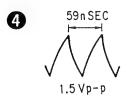


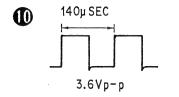


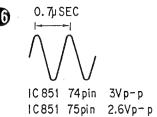


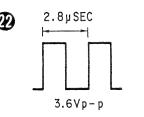


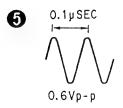


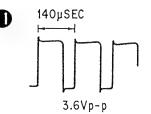


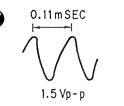


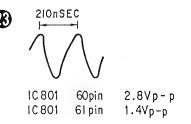


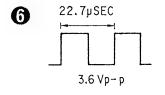


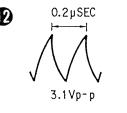




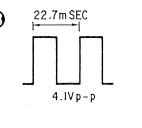


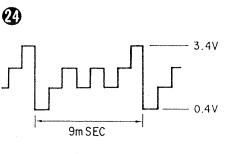


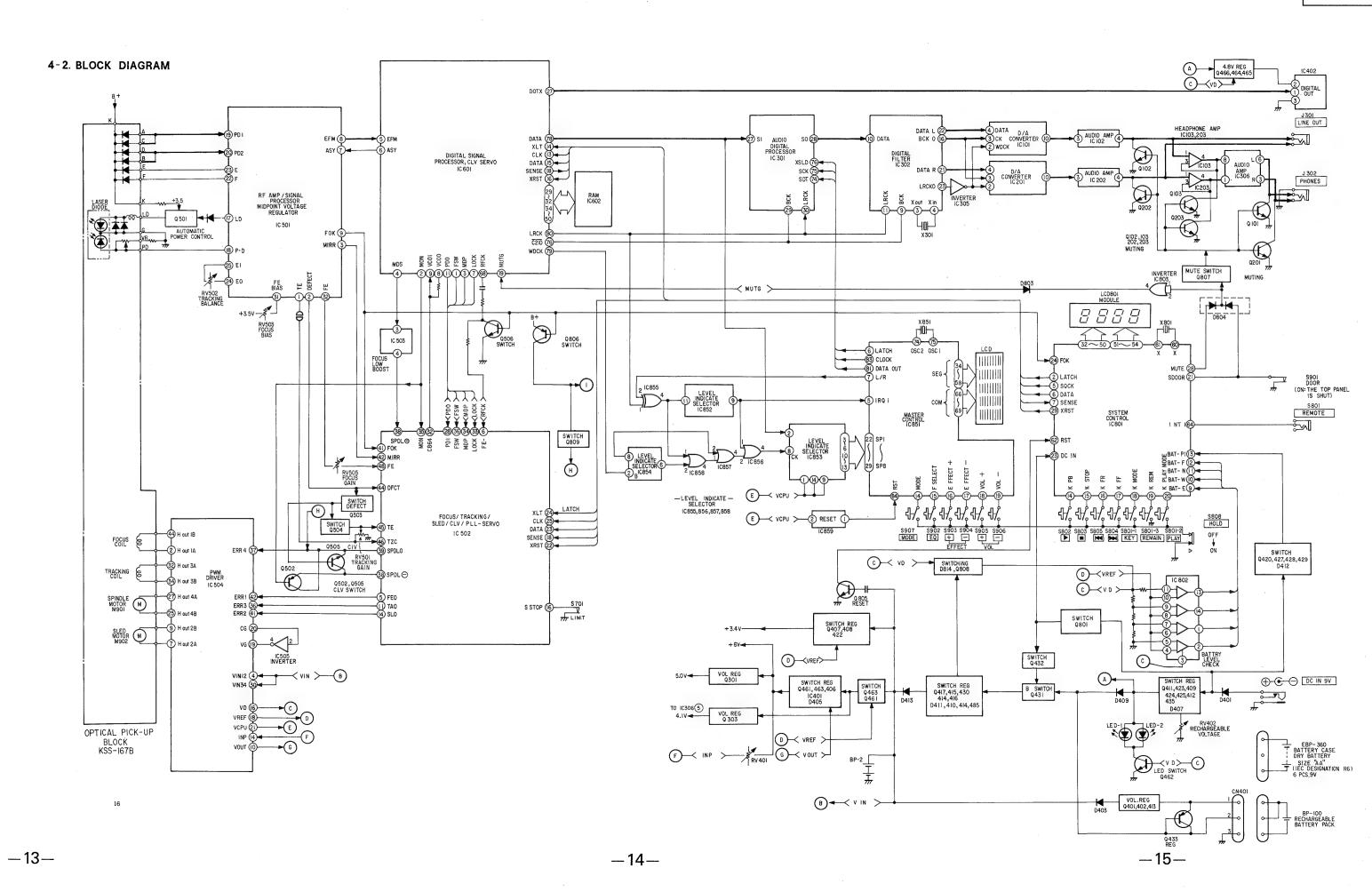




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Semiconductor Lead Layouts

Ref. No.	Location	Ref. No.	Location	
D301 D302 D303 D304 D305 D401 D403 D405 D406 D407 D409	A-22 B-1775686-11868-118	IC802 IC803 IC851 IC852 IC853 IC854 IC856 IC856 IC857 IC858 IC859	G-13 F-9 F-22 H-15 F-21 H-15 H-14 H-14 H-14 G-21	
D4112 D4113 D4114 D4150	F-G-F-G-F-F-F-G-G-F-F-G-G-H-H-G-A-A-A-A-A-A-G-E-D-D-D-F-F-B-C-H-F-T-150001122223340000 111922 443 115715 11571	Q101 Q102 Q103 Q103 Q103 Q103 Q103 Q103 Q103 Q103	BCDBDCDCCBFDDDDEEECGGFFFFFFDEFFFFFFFFCEDGDEEEFFGGGEHG9788782 87656677786777756667777666677819968	

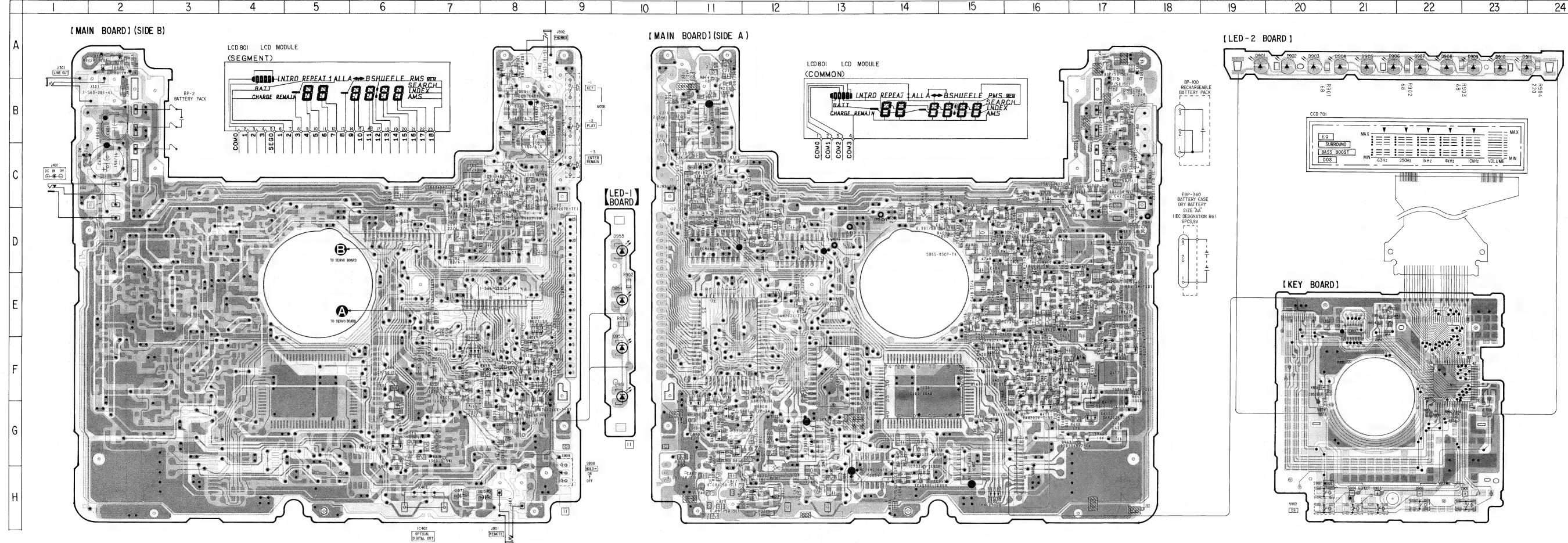
Note:

- Through hol
- Pattern on the side which is seen.
- Pattern on the side which is setPattern of the rear side.

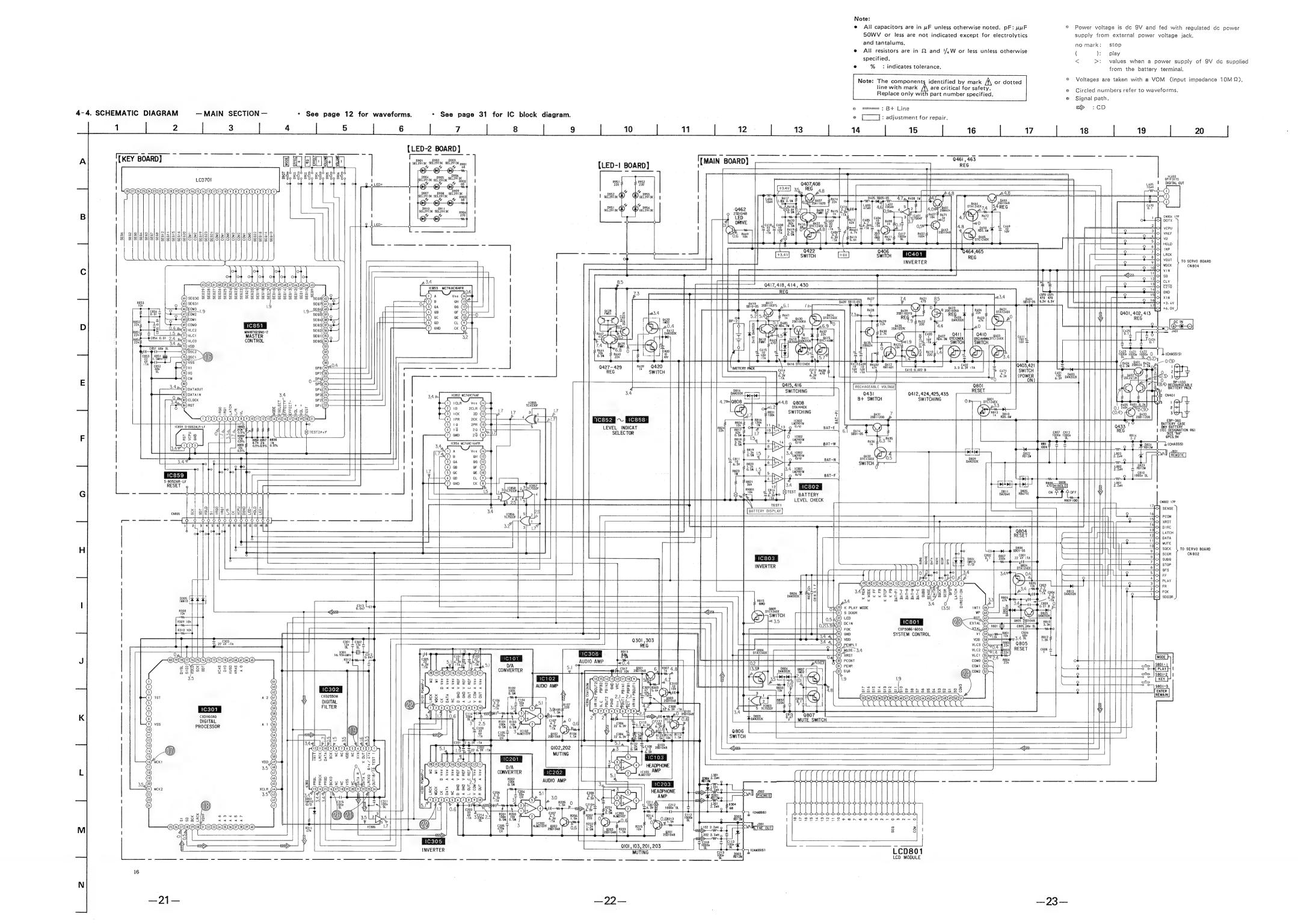
4-3. PRINTED WIRING BOARD — MAIN SECTION—

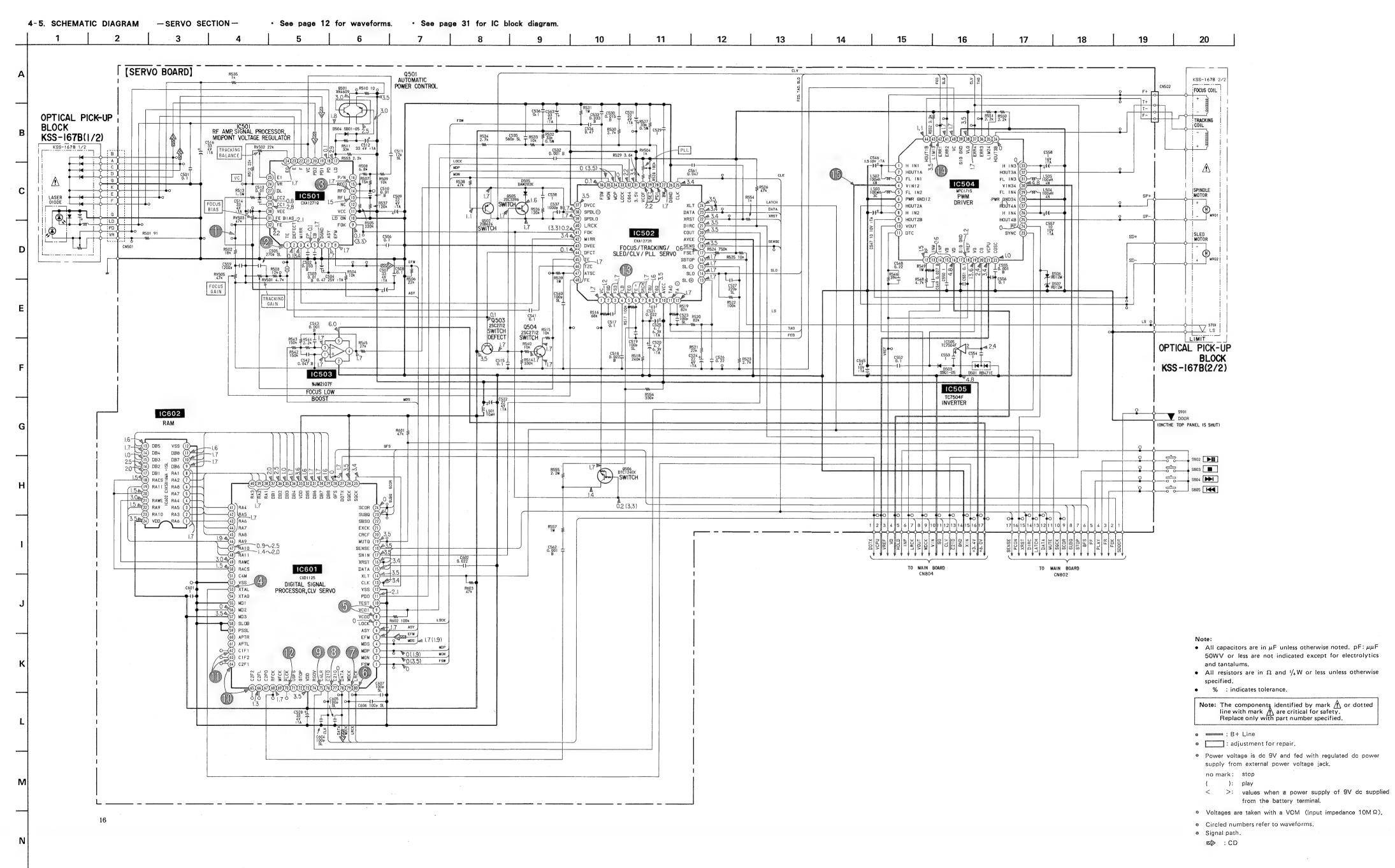
• See page 30 for Semiconductor Lead Layouts.

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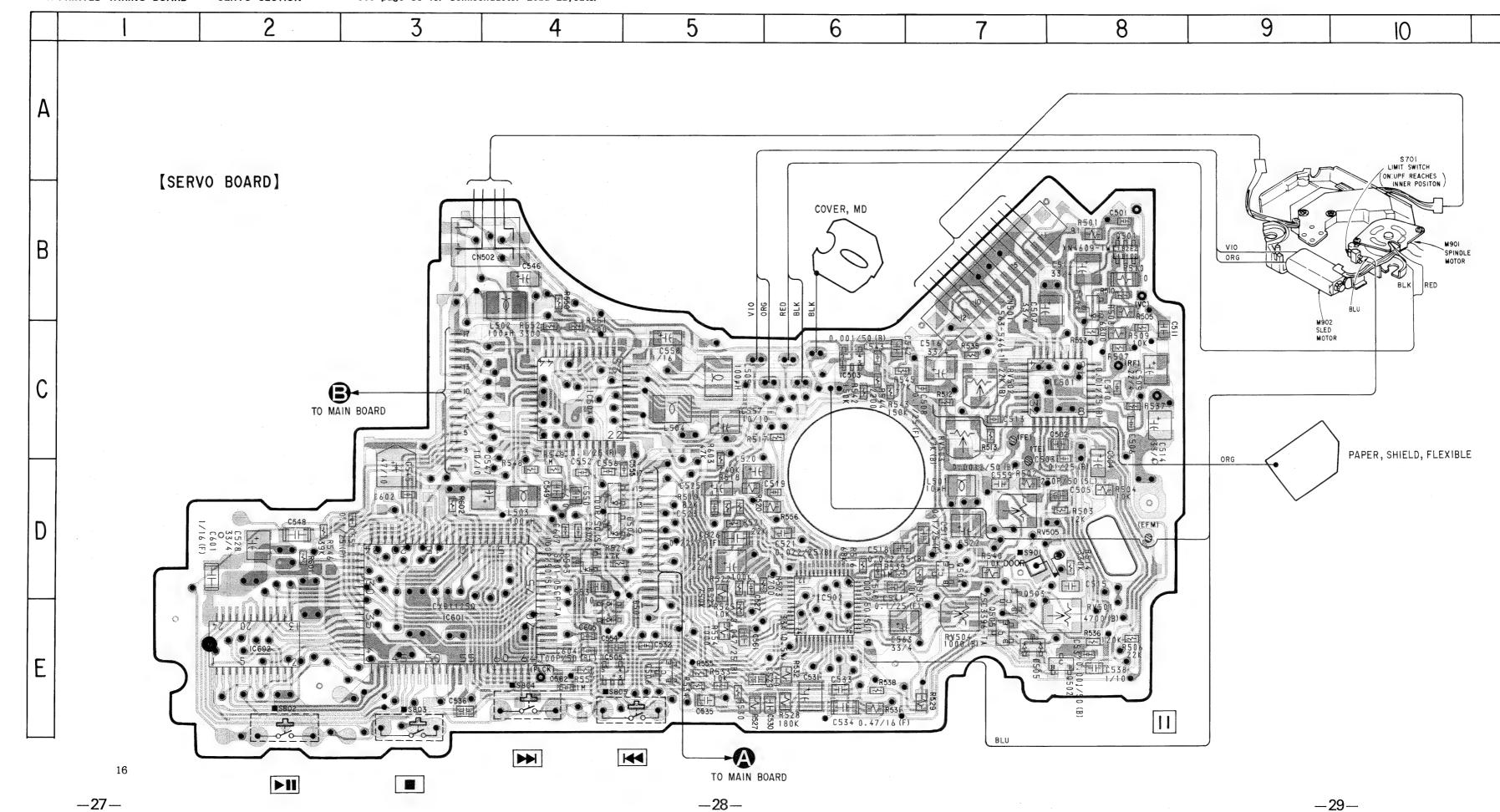
-26-

-24-

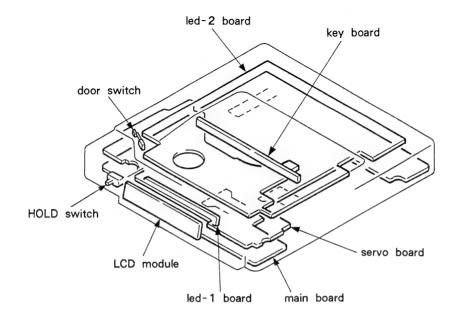
· Semiconductor	Location
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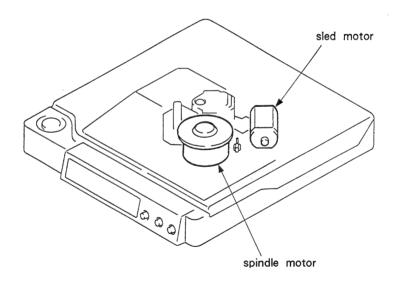
Ref. No.	Location
D501 D503 D504 D505 D506 D507	E-4 D-4 B-8 E-7 D-4
IC501 IC502 IC503 IC504 IC505 IC601 IC602	8664430 C64430 E20 E20
Q501 Q502 Q503 Q504 Q505 Q506	B-8 E-8 D-7 D-7 E-7 E-5

- Pattern on the side which is seen.
 Pattern of the rear side.



· CIRCUIT BOARD LOCATION

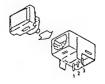




· Semiconductor Lead Layouts

GP1F31T

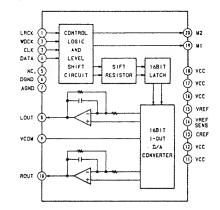
SEL2913K-D



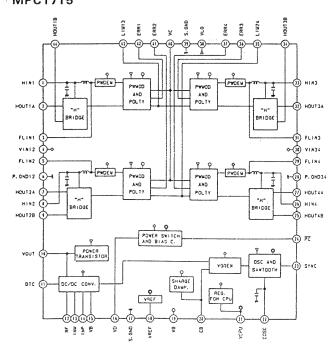


4-7. IC BLOCK DIAGRAM

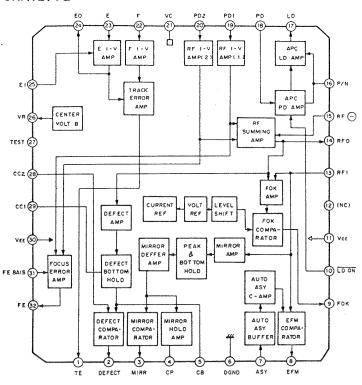




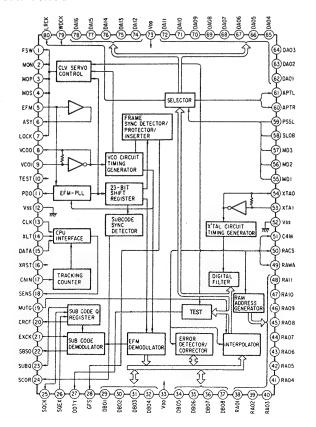
IC504 MPC1715



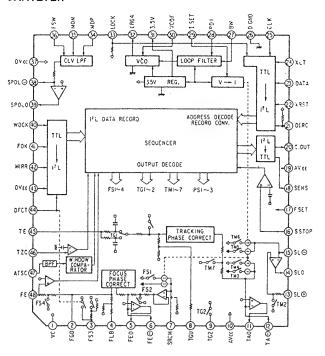
IC501 CXA1271Q



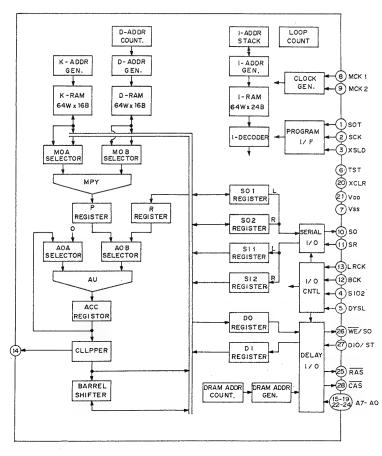
IC601 CXD1125Q



IC502 CXA1272R



IC301 CXD1160AQ



SECTION 5 EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts Example:
 (RED) ... KNOB, BALANCE (WHITE)

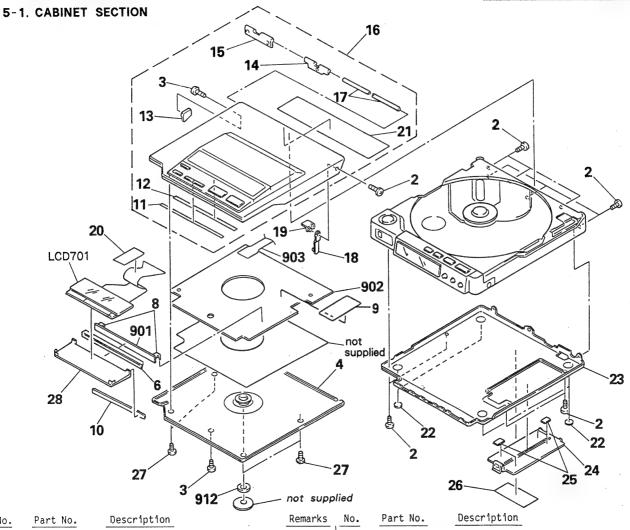
Cabinet's Color Parts' Color

The components identified by mark or dotted line with mark are critical for safety.

Replace only with part number specified.

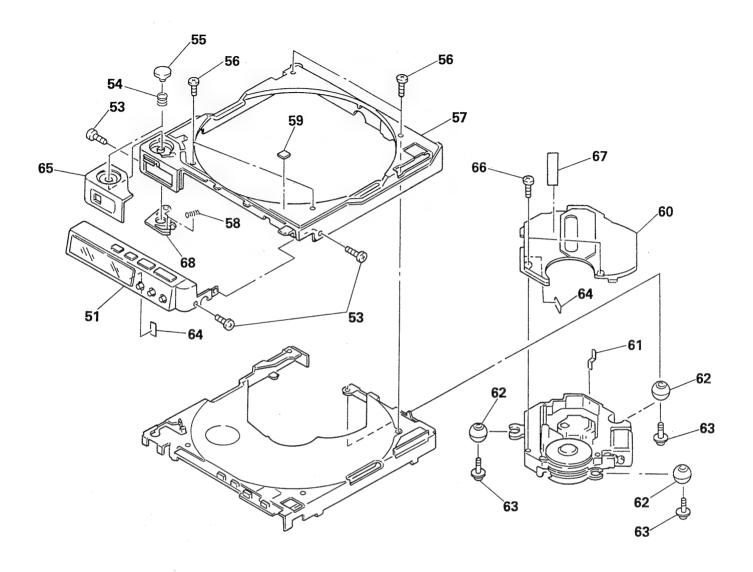
Les composants identifiés par une marque A sont critiques pour la sécurité.

Ne les remplacer que par une pièce portant le numéro spécifé.



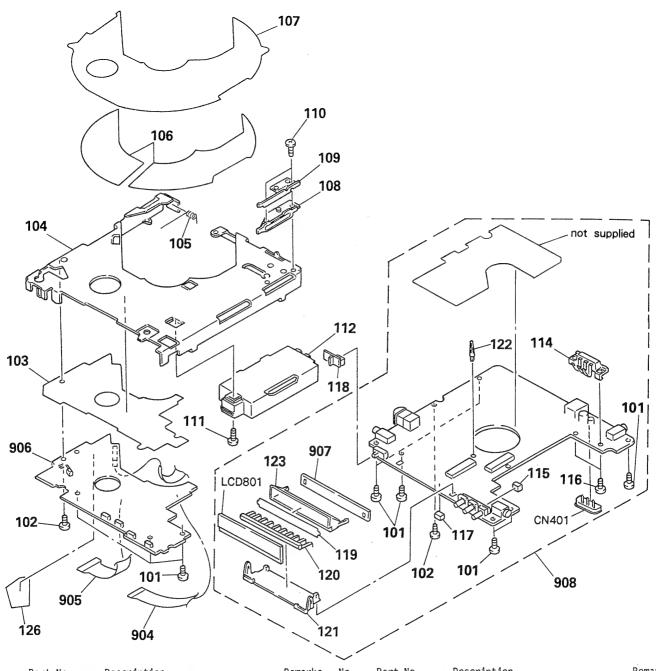
No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
2 3 4	3-895-823-41	SCREW (M1.4X3.0), SPECIAL HEAD SCREW (B1.4X4), TAPPING COVER (LID) ASSY		19 20 21 22	X-4917-704-1 *4-926-115-01 *4-932-714-01 4-912-641-01	SHEET (UPPER LID), INSULATING	
6 8 9	4-926-167-01	HOLDER (T-LED) TERMINAL BOARD (LED) SPACER (LCD FLEXIBLE) SHEET (DIFFUSION T)		23 24 25		PANEL ASSY, BOTTOM LID, BATTERY CASE CUSHION	
11 12	4-926-172-01 4-932-794-01	SHEET (F), ADHESIVE SHEET (M), ADHESIVE		26	*4-932-712-01		L NUMBER L NUMBER
13 14	4-920-272-01 4-924-143-01	RETAINER, SPRING, SWITCHING HINGE (RIGHT)		27 28 901	X-4921-249-1 *1-631-515-11	SCREW (M1.4X2.0), SPECIAL HEAD PLATE (T) ASSY, LIGHT GUIDE PC BOARD, LED-2	
15 16 17 18				902 903 912 LCD70	1-452-473-11	PC BOARD, KEY PC BOARD, KEY FLEXIBLE MAGNET DISPLAY PANEL, LIQUID CRYSTAL	

5-2. CHASSIS SECTION (1)

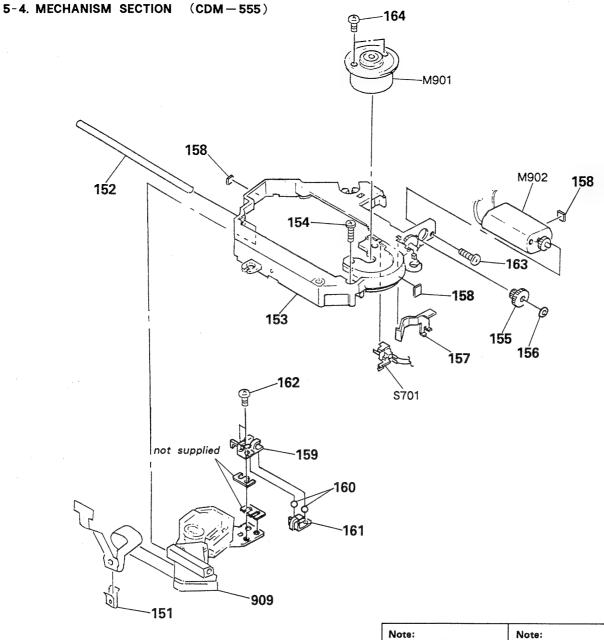


No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
51 53 54 55	3-703-816-72 4-917-727-01	PANEL (M) ASSY, FRONT SCREW (M1.4X3.0), SPECIAL HEAD SPRING, COMPRESSION BUTTON, OPEN		61 62 63 64	3-831-441-XX X-4917-723-1 4-920-209-01 9-911-838-XX	CUSHION DAMPER SCREW (INSULATOR), STEP CUSHION	
56 57 58 59 60	4-926-177-01 4-924-140-01	SCREW (M1.4X5.0), SPECIAL HEAD CABINET SPRING, COMPRESSION CUSHION (UPPER LID) COVER, MD		65 66 67 68	3-895-823-11	PANEL (AL), FRONT SCREW (B1.4X3), TAPPING LABEL, CAUTION, LENS LEVER, LOCK	

5-3. CHASSIS SECTION (2)



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
101 102 103 104 105	3-335-797-21 4-926-169-01 *X-4921-246-1	SCREW (M1.4X2.5), SPECIAL HEAD SCREW (M1.4X3), TOOTHED LOCK SHEET (S), INSULATING CHASSIS SUB ASSY SPRING (SWITCHING), TORSION				KNOB (HOLD) SHEET (DIFFUSION) SPACER (LCD TERMINAL)	
106 107 108 109 110	*4-917-753-01	COVER, CHASSIS PLATE, SLIDE, SWITCHING PLATE		123 126 904	*4-932-720-01 1-631-518-11	SPACER (PC) PLATE (F), LIGHT GUIDE PAPER, SHIELD, FLEXIBLE PC BOARD, FLEXIBLE PC BOARD, FLEXIBLE	
111 112 114 115 116	4-926-181-01 4-930-131-01 9-911-840-XX	SCREW (M1.4X3.0), SPECIAL HEAD CASE, BATTERY TERMINAL, BATTERY RUBBER (B) PRECISION SCREW +P 2X6 TYPE 3		908 CN401	*1-631-514-11 A-3015-777-A	PC BOARD ASSY, SERVO PC BOARD, LED-1 PC BOARD ASSY, MAIN TERMINAL, BATTERY DISPLAY PANEL, LIQUID CRYSTAL	



The components identified by mark A or dotted line with mark are critical for safety. Replace only with part number specified.

Note:
Les composants identifiés par une marque A sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
151 152 153 154 155	4-917-611-01 X-4930-108-1	CHASSIS ASSY, MD SCREW (1.7X8), SPECIAL		160 161 162 163 164	7-627-553-38		
156 157 158 159	3-315-384-11 4-921-290-01 *3-880-474-11 4-921-294-01	WASHER, STOPPER SPRING CUSHION, 15X5XO.3 RACK (A)		909 M901 M902 S701	A-3133-384-A A-3133-334-A	DEVICE, OPTICAL KSS-167B (RP) MOTOR ASSY, CLV MOTOR SUB ASSY, FEED SWITCH (LIMIT)	

SECTION 6 ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS: MF: μF, PF: μμF.

RESISTORS

- All resistors are in ohms.
- F: nonflammable

COILS

• MMH: mH, UH: μH

SEMICONDUCTORS

In each case, U: μ, for example: UA...: μΑ..., UPA...: μPA..., UPC...: μPC, UPD...: μPD... The components identified by mark \(\hat{\Lambda} \) or dotted line with mark \(\hat{\Lambda} \) are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque A sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

163131013	s in Other san	ne circuits may be officed.		UPC:	μPC, UPD.	: μPD				
Ref.No. P	art No.	Description			Ref.No.	Part No.	Description			
902 *1	-631-515-11 -631-516-12 -632-626-11	PC BOARD, LED-2 PC BOARD, KEY PC BOARD, KEY FLEXIBLE			C31 2 C31 3 C31 5	1-163-809-11 1-163-809-11 1-163-117-00	CERAMIC CHIP CERAMIC CHIP CERAMIC CHIP	0.047MF	10% 10% 5%	25V 25V 50V
905 1	-631-518-11 -631-517-11 -3015-778-A	PC BOARD, FLEXIBLE PC BOARD, FLEXIBLE PC BOARD ASSY, SERVO			C317 C318 C401	1-135-174-11 1-163-141-00 1-126-206-11	TANTAL. CHIP CERAMIC CHIP ELECT CHIP		20% 5% 20%	1 0V 50V 6.3V
908 A 909 ∆.8	-631-514-11 -3015-777-A -848-141-11 -452-473-11	PC BOARD, LED-1 PC BOARD ASSY, MAIN DEVICE, OPTICAL KSS-167B MAGNET	(RP)		C402 C403 C404	1 -1 35 -1 80 -21 1 -1 35 -091 -00 1 -1 35 -1 74 -11	TANTAL. CHIP TANTAL. CHIP TANTAL. CHIP	1 MF 1 OMF	20% 20% 20%	6.3V 16V 10V
C1 01 1 C1 02 1	-135-144-11 -135-144-11 -135-162-21	TANTAL. CHIP 22MF TANTAL. CHIP 22MF TANTAL. CHIP 33MF	20% 20% 20%	6.3V 6.3V 4V	C405 C406 C407	1-135-130-11 1-135-180-21 1-135-162-21	TANTAL. CHIP TANTAL. CHIP	3.3MF 33MF	20% 20% 20%	6.3V 6.3V 4V
C1 05 1	-163-105-00 -163-133-00 -135-149-21	CERAMIC CHIP 33PF CERAMIC CHIP 470PF TANTAL. CHIP 2.2MF	5% 5% 20%	50V 50V 6.3V	C408 C409 C410	1-135-174-11 1-135-159-21 1-163-037-11	TANTAL. CHIP TANTAL. CHIP CERAMIC CHIP	1 OMF 0.022MF	20% 20% 10%	1 0 V 1 6 V 25 V
C1 08 1	-135-130-11 -135-149-21 -135-149-21	TANTAL. CHIP 4.7MF TANTAL. CHIP 2.2MF TANTAL. CHIP 2.2MF	20% 20% 20%	6.3V 6.3V 6.3V	C411 C412 C413	1-126-357-11 1-135-180-21 1-135-159-21	TANTAL. CHIP	1 OMF	20% 20% 20%	16V 6.3V 16V
C111 1 C112 1	-126-206-11 -163-141-00 -163-117-00	ELECT CHIP 100MF CERAMIC CHIP 0.001MF CERAMIC CHIP 100PF	20% 5% 5%	6.3V 50V 50V	C414 C415 C416	1 -1 35 -1 49 -21 1 -1 35 -1 74 -1 1 1 -1 35 -1 49 -21	TANTAL. CHIP TANTAL. CHIP TANTAL. CHIP	1 OMF	20% 20% 20%	6.3V 10V 6.3V
C114 1 C201 1	-163-129-00 -135-144-11 -135-144-11	CERAMIC CHIP 330PF TANTAL. CHIP 22MF TANTAL. CHIP 22MF	5% 20% 20%	50V 6.3V 6.3V	C417 C418 C420	1-163-141-00 1-135-162-21 1-135-174-11	CERAMIC CHIP TANTAL. CHIP TANTAL. CHIP	33MF	5% 20% 20%	50V 4V 1 0V
C203 1 C204 1	-135-162-21 -163-105-00 -163-133-00	TANTAL. CHIP 33MF CERAMIC CHIP 33PF CERAMIC CHIP 470PF	20% 5% 5%	4V 50V 50V	C421 C422 C423	1 -163-141-00 1 -163-141-00 1 -163-141-00	CERAMIC CHIP CERAMIC CHIP CERAMIC CHIP	0.001 MF	5% 5% 5%	50V 50V 50V
C206 1 C207 1	-1 35 -1 49 -21 -1 35 -1 30 -1 1 -1 35 -1 49 -21	TANTAL. CHIP 2.2MF TANTAL. CHIP 4.7MF TANTAL. CHIP 2.2MF	20% 20% 20%	6.3V 6.3V 6.3V	C424 C425 C469	1-163-038-00 1-163-038-00 1-135-174-11	CERAMIC CHIP CERAMIC CHIP TANTAL. CHIP	0.1MF	20%	25V 25V 1 0V
C210 1 C211 1	-1 35 -1 49 -21 -1 26 -206 -1 1 -1 63 -1 41 -00	TANTAL. CHIP 2.2MF ELECT CHIP 100MF CERAMIC CHIP 0.001MF	20% 20% 5%	6.3V 6.3V 50V	C470 C471 C501	1-163-038-00 1-135-181-21 1-164-156-11	CERAMIC CHIP TANTAL. CHIP CERAMIC CHIP	4.7MF	20%	25V 6.3V 25V
C213 1 C214 1	-163-117-00 -163-129-00 -163-095-00	CERAMIC CHIP 100PF CERAMIC CHIP 330PF CERAMIC CHIP 12PF	5% 5% 5%	50V 50V 50V	C502 C503 C504	1-163-989-11 1-162-970-11 1-135-145-11	CERAMIC CHIP CERAMIC CHIP TANTAL. CHIP	0.01MF	10% 10% 20%	25V 25V 25V
C302 1 C303 1	-163-095-00 -135-131-11 -135-144-11	CERAMIC CHIP 12PF TANTAL. CHIP 22MF TANTAL. CHIP 22MF	5% 20% 20%	50V 4V 6.3V	C505 C506 C507	1-163-127-00 1-164-156-11 1-135-162-21	CERAMIC CHIP CERAMIC CHIP TANTAL. CHIP	0.1 MF	5% 20%	50V 25V 4V
C305 1 C306 1	-135-144-11 -135-144-11 -135-144-11	TANTAL. CHIP 22MF TANTAL. CHIP 22MF TANTAL. CHIP 22MF TANTAL. CHIP 22MF	20% 20% 20% 20%	6.3V 6.3V 6.3V	C508 C509 C510	1-164-156-11 1-135-131-11 1-162-970-11	CERAMIC CHIP TANTAL. CHIP CERAMIC CHIP	22MF	20% 10%	25V 4V 25V
C309 1 C310 1	-135-206-11 -135-174-11 -162-953-11	TANTAL. CHIP 47MF TANTAL. CHIP 10MF CERAMIC CHIP 100PF	20% 20% 5%	10V 10V 50V	C511 C512 C513	1-163-095-00 1-135-162-21 1-162-970-11	CERAMIC CHIP TANTAL. CHIP CERAMIC CHIP	33MF	5% 20% 10%	50V 4V 25V

Ref.No.	Part No.	Description			Ref.No.	Part No.	Description		
C514 C515 C516	1-135-162-21 1-163-038-00 1-135-162-21	TANTAL. CHIP 33MF CERAMIC CHIP 0.1MF TANTAL. CHIP 33MF	20% 20%	4V 25V 4V	C803 C804 C805	1-135-149-21 1-135-149-21 1-162-951-11	TANTAL. CHIP 2.2MF	20% 20% 5%	6.3V 6.3V 50V
C517 C518 C519	1-163-038-00 1-163-037-11 1-162-953-11	CERAMIC CHIP 0.1MF CERAMIC CHIP 0.022MF CERAMIC CHIP 100PF	1 0% 5%	25V 25V 50V	C806 C807 C808	1-162-951-11 1-163-141-00 1-162-638-11	CERAMIC CHIP 68PF CERAMIC CHIP 0.001MF CERAMIC CHIP 1MF	5% 5%	50V 50V 16V
C520 C521 C522	1-135-181-21 1-163-037-11 1-135-131-11	TANTAL. CHIP 4.7MF CERAMIC CHIP 0.022MF TANTAL. CHIP 22MF	20% 10% 20%	6.3V 25V 4V	C809 C810 C811	1-162-970-11 1-163-141-00 1-135-157-21	CERAMIC CHIP 0.01MF CERAMIC CHIP 0.001MF TANTAL. CHIP 10MF	10% 5% 20%	25V 50V 6.3V
C523 C524 C525	1 -1 62 -953 -11 1 -1 35 -1 31 -11 1 -1 35 -1 81 -21	CERAMIC CHIP 100PF TANTAL. CHIP 22MF TANTAL. CHIP 4.7MF	5% 20% 20%	50V 4V 6.3V	C812 C813 C814	1-163-141-00 1-163-038-00 1-135-150-21		5% 20%	50V 25V 6.3V
C526 C527 C528	1-163-081-00 1-162-957-11 1-135-162-21	CERAMIC CHIP 0.22MF CERAMIC CHIP 220PF TANTAL. CHIP 33MF	5% 20%	25V 50V 4V	C815 C818 C851	1-162-637-11 1-163-038-00 1-163-113-00		5%	16V 25V 50V
C529 C530 C531	1-164-234-11 1-163-023-00 1-135-131-11	CERAMIC CHIP 1MF CERAMIC CHIP 0.015MF TANTAL. CHIP 22MF	10% 20%	1 OV 5 OV 4 V	C852 C853 C854	1-163-113-00 1-135-131-11 1-164-232-11	TANTAL. CHIP 22MF	5% 20% 10%	50V 4V 50V
C532 C533 C534	1-162-964-11 1-163-989-11 1-162-637-11	CERAMIC CHIP 0.001MF CERAMIC CHIP 0.033MF CERAMIC CHIP 0.47MF	1 0% 1 0%	50V 25V 16V	C855 C856	1-164-232-11 1-164-232-11	CERAMIC CHIP 0.01MF CERAMIC CHIP 0.01MF	10% 10%	50 V 50 V
C535 C536 C537	1-163-135-00 1-163-038-00	CERAMIC CHIP 560PF CERAMIC CHIP 0.1MF CERAMIC CHIP 0.001MF	5%	50V 25V	CN401 CN501 CN502	1-535-608-21 1-563-546-11 1-568-290-11	TERMINAL, BATTERY HOUSING, CONNECTOR 12P SOCKET, CONNECTOR 4P		
C538 C540 C541	1-164-234-11 1-162-953-11 1-163-038-00	CERAMIC CHIP 1MF CERAMIC CHIP 100PF CERAMIC CHIP 0.1MF	1 0% 5%	50V 1 0V 50V 25V	CN804 CN805	*1-566-533-11 *1-566-533-11 1-566-531-11	CONNECTOR, FPC (ZIF) 17P CONNECTOR, FPC (ZIF) 17P CONNECTOR, FPC (ZIF) 15P	1	
C542 C543 C545	1-163-809-11 1-162-964-11 1-135-206-11	CERAMIC CHIP 0.047MF CERAMIC CHIP 0.001MF TANTAL. CHIP 47MF	1 0% 1 0% 20%	25V 50V 1 0V	D301 D302 D303	8-719-106-70	DIODE RD12M2B1 DIODE RD12M2B1		
C546 C547 C548	1-135-148-21 1-135-174-11 1-163-081-00	TANTAL. CHIP 1.5MF TANTAL. CHIP 10MF CERAMIC CHIP 0.22MF	10%	1 OV 1 OV 25 V	D304 D305 D401	8-71 9-951 -22 8-71 9-975-34	DIODE RD12M2B1 DIODE IMN10T108 DIODE RB110C-T100		
C549 C550 C551	1-163-986-00 1-164-234-11 1-164-156-11	CERAMIC CHIP 0.027MF CERAMIC CHIP 1MF CERAMIC CHIP 0.1MF	10%	25V 1 OV 25V	D403 D405 D406	8-719-400-18 8-719-975-42 8-719-400-18			
C552 C553 C554	1-164-156-11 1-164-234-11 1-164-234-11	CERAMIC CHIP 0.1MF CERAMIC CHIP 1MF CERAMIC CHIP 1MF		25V 1 OV 1 OV	D407 D409 D410	8-719-800-76			
C555 C556 C557	1-162-964-11 1-164-156-11 1-135-174-11	CERAMIC CHIP 0.001MF CERAMIC CHIP 0.1MF TANTAL. CHIP 10MF	1 0% 20%	50V 25V 1 0V	D411 D412 D413	8-719-400-18 8-719-975-34	DIODE MA152WK DIODE MA152WK DIODE RB110C-T100		
C558 C559 C561	1-135-091-00 1-163-010-11 1-163-809-11	TANTAL. CHIP 1MF CERAMIC CHIP 0.0012MF CERAMIC CHIP 0.047MF	20% 10% 10%	16V 50V 25V	D414 D415 D450	8-719-938-72 8-719-400-18 8-719-105-91	DIODE SB01-05CP DIODE MA152WK DIODE RD5.6MB2		
C562 C563 C570	1-162-964-11 1-135-162-21 1-126-114-11	CERAMIC CHIP 0.001MF TANTAL. CHIP 33MF ELECT 470MF	10% 20% 20%	50V 4V 6.3V	D485 D501 D503	8-719-105-72 8-719-975-46 8-719-938-72	DIODE RD4.7MB1 DIODE RB471E DIODE SB01-05CP		
C571 C601 C602	1-126-114-11 1-162-638-11 1-162-995-11	ELECT 470MF CERAMIC CHIP 1MF CERAMIC CHIP 0.022MF	20%	6.3V 16V 50V	D504 D505 D506	8-719-938-72 8-719-400-18 8-719-106-70	DIODE SB01-05CP DIODE MA152WK DIODE RD12M-B1		
C604 C605 C606	1-162-953-11 1-162-953-11 1-162-953-11	CERAMIC CHIP 100PF CERAMIC CHIP 100PF CERAMIC CHIP 100PF	5% 5% 5%	50V 50V 50V	D507 D801 D803	8-719-951-22	DIODE RD12M-B1 DIODE IMN10T108 DIODE MA152WK		
C607	1-162-953-11 1-135-131-11 1-163-038-00	CERAMIC CHIP 100PF TANTAL. CHIP 22MF CERAMIC CHIP 0.1MF	5% 20%	50V 4V 25V	D804 D805 D807 D808	8-719-975-46 8-719-400-18	DIODE MA152WK DIODE RB471E DIODE MA152WK DIODE SB01-05CP		

Ref.No.	Part No.	Description	Ref.No.	Part No.	Description
D809 D810 D811	8-719-105-91	DIODE MA152WK DIODE RD5.6MB2 DIODE 1SS226	JR302	1-216-295-00 1-216-864-11 1-216-295-00	METAL GLAZE 0 5% 1/10W METAL GLAZE 0 5% 1/16W METAL GLAZE 0 5% 1/10W
D81 3 D81 4 D822		DIODE MA152WK DIODE MA152WK DIODE RD12MB1	JR802 JR803	1-216-296-00 1-216-296-00 1-216-864-11 1-216-295-00	METAL GLAZE 0 5% 1/8W METAL GLAZE 0 5% 1/8W METAL GLAZE 0 5% 1/16W METAL GLAZE 0 5% 1/10W
D823 D824 D825	8-719-106-70	DIODE RD1 2MB1 DIODE RD1 2MB1 DIODE MA152WK	L1 01 L1 02 L201	1-410-997-31 1-410-997-31 1-410-997-31	INDUCTOR CHIP 2.2UH INDUCTOR CHIP 2.2UH INDUCTOR CHIP 2.2UH INDUCTOR CHIP 2.2UH
D826 D901 D902	8-719-400-18 18-719-302-88 8-719-302-88	DIODE MA152WK DIODE SEL2913K-D DIODE SEL2913K-D	L202 L301 L402	1-410-997-31 1-410-997-31 1-412-039-51	INDUCTOR CHIP 2.2UH INDUCTOR CHIP 2.2UH INDUCTOR CHIP 2.2UH INDUCTOR CHIP 100UH
D903 D904 D905		DIODE SEL2913K-D DIODE SEL2913K-D DIODE SEL2913K-D	L403 L404 L405		INDUCTOR CHIP 47UH INDUCTOR CHIP 10UH INDUCTOR CHIP 10UH
D906 D907 D908	8-719-302-88	DIODE SEL2913K-D DIODE SEL2913K-D DIODE SEL2913K-D	L501 L502 L503	1-412-029-11 1-412-039-51 1-412-032-11	INDUCTOR CHIP 10UH INDUCTOR CHIP 100UH INDUCTOR CHIP 100UH
D909 D910 D911	8-719-302-88	DIODE SEL2913K-D DIODE SEL2913K-D DIODE SEL2913K-D	L504 L505 L801	1-412-039-51 1-412-039-51 1-410-997-31	INDUCTOR CHIP 100UH INDUCTOR CHIP 100UH INDUCTOR CHIP 2.2UH
D951 D952 D954 D955	8-719-302-88 8-719-302-88	DIODE SEL2913K-D DIODE SEL2913K-D DIODE SEL2913K-D DIODE SEL2913K-D	L802 L803	1-410-997-31 1-410-997-31	INDUCTOR CHIP 2.2UH INDUCTOR CHIP 2.2UH
IC101 IC102	8-759-983-82 8-759-710-79	IC PCM66P-J IC NJM2107F		1-808-771-11 1-808-770-11	DISPLAY PANEL, LIQUID CRYSTAL DISPLAY PANEL, LIQUID CRYSTAL
IC103	8-759-710-79	IC NJM2107F	M901 M902	A-3133-384-A A-3133-334-A	MOTOR ASSY, CLV MOTOR SUB ASSY, FEED
	8-759-710-79 8-759-710-79	IC PCM66P-J IC NJM2107F IC NJM2107F	Q1 01 Q1 02 Q1 03	8-729-921-81 8-729-921-81 8-729-921-81	TRANSISTOR 2SD1781K-QR-T97 TRANSISTOR 2SD1781K-QR-T97 TRANSISTOR 2SD1781K-QR-T97
IC302 IC305	8-752-332-80 8-752-334-07 8-759-230-43	IC CXD1160AQ IC CXD2551M IC TC7S04F	Q201 Q202 Q203	8-729-921-81 8-729-921-81 8-729-921-81	TRANSISTOR 2SD1781K-QR-T97 TRANSISTOR 2SD1781K-QR-T97 TRANSISTOR 2SD1781K-QR-T97
IC306 IC401 IC402		IC CXA1263M-T3 IC TC7SO4F IC GP1F31T (OPTICAL DIGITAL OUT)	Q301 Q303 Q401	8-729-921-81 8-729-921-81 8-729-904-87	TRANSISTOR 2SD1781K-QR-T97 TRANSISTOR 2SD1781K-QR-T97 TRANSISTOR 2SB1197K-R
	8-752-033-98	IC CXA1271Q IC CXA1272R IC NJM2107F	Q402 Q403 Q406	8-729-901-78 8-729-901-00 8-729-921-81	TRANSISTOR 2SC2412K TRANSISTOR DTC124EK TRANSISTOR 2SD1781K-QR-T97
	8-759-030-17 8-759-230-43 8-752-332-38		Q407 Q408 Q409	8-729-216-22 8-729-903-10 8-729-921-84	TRANSISTOR 2SA1162G TRANSISTOR FMWI TRANSISTOR 2SB1182F5-Q
IC602 IC801 IC802	8-752-328-67 8-752-811-62 8-759-982-77	IC CXK5816MA-15L IC CXP5086-608Q IC BA10339F	Q410 Q411 Q412	8-729-901-03 8-729-901-00 8-729-207-55	TRANSISTOR DTC144WK TRANSISTOR DTC124EK TRANSISTOR RN1401
IC851	8-759-420-54	IC TC7532F IC MN18762-SND-3 IC MC74HC74AF	Q413 Q414 Q415	8-729-901-78 8-729-901-05 8-729-901-03	TRANSISTOR XXII-101 TRANSISTOR DTA124EK TRANSISTOR DTC144WK
IC853 IC854 IC855		IC MC74HC164F IC MC74HC164F IC TC4S30F	Q416 Q417 Q418	8-729-901-00 8-729-921-84 8-729-903-10	TRANSISTOR DTC124EK TRANSISTOR 2SB1182F5-Q
IC858	8-759-234-10 8-759-234-10 8-759-234-10 8-759-986-85	IC TC7S32F IC TC7S32F IC TC7S32F IC S-8052ALR-LF	Q420 Q421 Q422	8-729-907-39 8-729-901-05	TRANSISTOR FMW1 TRANSISTOR IMD2 TRANSISTOR DTA124EK TRANSISTOR DTC124EK
J301 J302 J401 J801	1-563-281-41 1-563-281-51 1-562-961-11 1-563-281-61	JACK (LINE OUT) JACK (PHONES) JACK (DC IN 9V) JACK (REMOTE)			

Ref.No.	Part No.	Description	Ref.No.	Part No.	Description			
Q423 Q424 Q425	8-729-116-06 8-729-901-00 8-729-216-22	TRANSISTOR DTC124EK	R309 R310 R311	1-216-833-11 1-216-833-11 1-216-841-11		1 OK 1 OK 47K	5% 5% 5%	1/16W 1/16W 1/16W
Q427	8-729-216-22	TRANSISTOR 2SA812	R312	1-216-857-11	METAL GLAZE	1 M		1/16W
Q428	8-729-902-96	TRANSISTOR FMS1	R313	1-216-671-11	METAL CHIP	6.8K		1/10W
Q429	8-729-903-10	TRANSISTOR FMW1	R401	1-216-832-11	METAL GLAZE	8.2K		1/16W
Q430	8-729-116-06		R402	1-216-845-11	METAL GLAZE	100K	5%	1/16W
Q431	8-729-807-33		R403	1-216-841-11	METAL GLAZE	47K	5%	1/16W
Q432	8-729-901-00		R404	1-216-861-11	METAL GLAZE	2.2M	5%	1/16W
Q433	8-729-807-33	TRANSISTOR 2SB1112-R	R405	1-216-106-00	METAL GLAZE	240K	5%	1/10W
Q435	8-729-904-87	TRANSISTOR 2SB1197K-R	R406	1-216-837-11	METAL GLAZE	22K	5%	1/16W
Q461	8-729-904-87	TRANSISTOR 2SB1197K-R	R407	1-216-073-00	METAL GLAZE	10K	5%	1/10W
Q462	8-729-921-81	TRANSISTOR 2SD1781K-QR-T97	R408	1-216-857-11	METAL GLAZE	1M	5%	1/16W
Q463	8-729-921-81	TRANSISTOR 2SD1781K-QR-T97	R409	1-216-821-11	METAL GLAZE	1K	5%	1/16W
Q464	8-729-901-05	TRANSISTOR DTA124EK	R410	1-216-033-00	METAL GLAZE	220	5%	1/10W
Q465	8-729-901-00	TRANSISTOR DTC124EK TRANSISTOR 2SD1781K-QR-T97 TRANSISTOR XN4609	R411	1-216-833-11	METAL GLAZE	1 0K	5%	1/16W
Q466	8-729-921-81		R412	1-216-092-00	METAL GLAZE	62K	5%	1/10W
Q501	8-729-402-90		R413	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W
Q502	8-729-904-87	TRANSISTOR 2SB1197K TRANSISTOR 2SC2412K-R TRANSISTOR 2SC2412K-R	R414	1-216-837-11	METAL GLAZE	22K	5%	1/16W
Q503	8-729-920-78		R415	1-216-821-11	METAL GLAZE	1K	5%	1/16W
Q504	8-729-920-78		R416	1-216-021-00	METAL GLAZE	68	5%	1/10W
Q505 Q506 Q801	8-729-805-43 8-729-901-00 8-729-901-00	TRANSISTOR 2SC3396 TRANSISTOR DTC124EK TRANSISTOR DTC124EK	R417 R418 R419	1-216-657-11 1-216-664-11 1-216-663-11	METAL CHIP METAL CHIP METAL CHIP	1.8K 3.6K 3.3K	0.50%	1/10W 1/10W 1/10W
Q804	8-729-901-05	TRANSISTOR DTA124EK TRANSISTOR 2SD1781K-QR-T97 TRANSISTOR DTA124EK	R420	1-216-697-11	METAL CHIP	82K	0.50%	1/10W
Q805	8-729-921-81		R421	1-216-041-00	METAL GLAZE	470	5%	1/10W
Q806	8-729-901-05		R422	1-216-037-00	METAL GLAZE	330	5%	1/10W
Q807	8-729-907-39	TRANSISTOR IMD2	R423	1-216-833-11	METAL GLAZE	1 OK	5%	1/16W
Q808	8-729-901-06	TRANSISTOR DTA144EK	R426	1-216-861-11	METAL GLAZE	2.2M	5%	1/16W
Q809	8-729-901-00	TRANSISTOR DTC124EK	R427	1-217-806-11	METAL GLAZE	1	5%	1/8W
	1-216-699-11	METAL CHIP 100K 0.50% 1/10W	R428	1-217-806-11	METAL GLAZE	1	5%	1/8W
	1-216-699-11	METAL CHIP 100K 0.50% 1/10W	R429	1-216-834-11	METAL GLAZE	12K	5%	1/16W
	1-216-675-11	METAL CHIP 10K 0.50% 1/10W	R430	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W
R1 06	1-216-823-11	METAL GLAZE 1.5K 5% 1/16W	R435	1-216-821-11	METAL GLAZE	1 K	5%	1/16W
	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	R436	1-216-821-11	METAL GLAZE	1 K	5%	1/16W
	1-216-813-11	METAL GLAZE 220 5% 1/16W	R437	1-216-837-11	METAL GLAZE	22 K	5%	1/16W
R114 R115	1-216-823-11 1-216-797-11 1-216-833-11	METAL GLAZE	R438 R439 R440	1-216-041-00 1-216-821-11 1-216-837-11	METAL GLAZE METAL GLAZE METAL GLAZE	470 1 K 22K	5% 5% 5%	1/10W 1/16W 1/16W
R122	1-216-663-11 1-216-653-11 1-216-823-11	METAL CHIP 3.3K 0.50% 1/10W METAL CHIP 1.2K 0.50% 1/10W METAL GLAZE 1.5K 5% 1/16W	R441 R442 R443	1-216-821-11 1-216-017-00 1-216-041-00	METAL GLAZE METAL GLAZE METAL GLAZE	1 K 47 470	5% 5% 5%	1/16W 1/10W 1/10W
R202	1-216-699-11	METAL CHIP 100K 0.50% 1/10W	R444	1-216-675-11	METAL CHIP	1 OK	0.50%	1/10W
	1-216-699-11	METAL CHIP 100K 0.50% 1/10W	R469	1-216-833-11	METAL GLAZE	1 OK	5%	1/16W
	1-216-675-11	METAL CHIP 10K 0.50% 1/10W	R471	1-216-821-11	METAL GLAZE	1 K	5%	1/16W
R206	1-216-823-11	METAL GLAZE 1.5K 5% 1/16W	R472	1-216-821-11	METAL GLAZE	1K	5%	1/16W
	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	R501	1-216-024-00	METAL GLAZE	91	5%	1/10W
	1-216-813-11	METAL GLAZE 220 5% 1/16W	R502	1-216-079-00	METAL GLAZE	18K	5%	1/10W
R214	1-216-797-11	METAL GLAZE 1.5K 5% 1/16W METAL GLAZE 10 5% 1/16W METAL GLAZE 10K 5% 1/16W	R503 R504 R505	1-216-834-11 1-216-073-00 1-216-105-00	METAL GLAZE METAL GLAZE METAL GLAZE	12K 10K 220K	5% 5% 5%	1/16W 1/10W 1/10W
R222	1-216-653-11	METAL CHIP 3.3K 0.50% 1/10W METAL CHIP 1.2K 0.50% 1/10W METAL GLAZE 1.5K 5% 1/16W	R506 R507 R508	1-216-837-11 1-216-835-11 1-216-069-00	METAL GLAZE METAL GLAZE METAL GLAZE	22K 15K 6.8K	5% 5% 5%	1/16W 1/16W 1/10W
R304 R307	1-216-021-00 1-216-821-11	METAL GLAZE 5.6K 5% 1/16W METAL GLAZE 68 5% 1/10W METAL GLAZE 1K 5% 1/16W METAL GLAZE 10K 5% 1/16W	R509 R510 R511	1-216-833-11 1-216-150-00 1-216-839-11	METAL GLAZE METAL GLAZE METAL GLAZE	1 OK 1 O 33K	5% 5% 5%	1/16W 1/8W 1/16W

Ref.No.	Part No.	Description			1	Ref.No.	Part No.	Description			
R512	1-216-837-11	METAL GLAZE	22K	5%	1/16W	R812	1-216-824-11	METAL GLAZE	1.8K	5%	1/16W
R513	1-216-859-11	METAL GLAZE	1.5M	5%	1/16W	R813	1-216-821-11	METAL GLAZE	1K	5%	1/16W
R514	1-216-851-11	METAL GLAZE	330K	5%	1/16W	R814	1-216-298-00	METAL GLAZE	2.2	5%	1/10W
R515	1-216-833-11	METAL GLAZE	1 OK	5%	1/16W	R815	1-216-045-00	METAL GLAZE	680	5%	1/10W
R516	1-216-843-11	METAL GLAZE	68K	5%	1/16W	R816	1-218-163-11	METAL GLAZE	120K	1%	1/10W
R517	1-216-845-11	METAL GLAZE	1 OOK	5%	1/16W	R817	1-216-694-11	METAL CHIP	62K	0.50%	1/10W
R518	1-216-106-00	METAL GLAZE	240K	5%	1/10W	R818	1-216-665-11	METAL CHIP	3.9K	0.50%	1/10W
R519	1-216-844-11	METAL GLAZE	82K	5%	1/16W	R819	1-216-654-11	METAL CHIP	1.3K		1/10W
R520	1-216-844-11	METAL GLAZE	82K	5%	1/16W	R820	1-216-653-11	METAL CHIP	1.2K		1/10W
R521	1-216-837-11	METAL GLAZE	22K	5%	1/16W	R821	1-216-688-00	METAL GLAZE	36K	0.50%	1/10W
R522	1-216-845-11	METAL GLAZE	100K	5%	1/16W	R823	1-216-857-11	METAL GLAZE	1 M	5%	1/16W
R523	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	R824	1-216-837-11	METAL GLAZE	22K	5%	1/16W
R524	1-216-118-00	METAL GLAZE	750K	5%	1/10W	R826	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R525	1-216-833-11	METAL GLAZE	1 0K	5%	1/16W	R831	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R526	1-216-841-11	METAL GLAZE	47K	5%	1/16W	R832	1-216-849-11	METAL GLAZE	220K	5%	1/16W
R527	1-216-687-11	METAL CHIP	33K	0.50%	1/10W	R833	1-216-833-11	METAL GLAZE	1 0K	5%	1/16W
R528	1-216-103-00	METAL GLAZE	180K	5%	1/10W	R839	1-216-837-11	METAL GLAZE	22K	5%	1/16W
R529	1-216-062-00	METAL GLAZE	3.6K	5%	1/10W	R851	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R530	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	R852	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R531	1-216-121-00	METAL GLAZE	1 M	5%	1/10W	R853	1-216-073-00	METAL GLAZE	1 0K	5%	1/10W
R532	1-216-687-11	METAL CHIP	33K	0.50%	1/10W	R854	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R533	1-216-833-11	METAL GLAZE	10K	5%	1/16W	R855	1-216-678-11	METAL CHIP	1 3K	0.50%	1/10W
R534	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	R856	1-216-651-11	METAL CHIP	1 K		1/10W
R535	1-216-821-11	METAL GLAZE	1K	5%	1/16W	R857	1-216-658-11	METAL CHIP	2 K		1/10W
R536	1-216-846-11	METAL GLAZE	120K	5%	1/16W	R858	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W
R537	1-216-846-11	METAL GLAZE	120K	5%	1/16W	R859	1-216-675-11	METAL CHIP	10K		1/10W
R538	1-216-841-11	METAL GLAZE	47K	5%	1/16W	R860	1-216-682-11	METAL CHIP	20K		1/10W
R539	1-216-857-11	METAL GLAZE	1 M	5%	1/16W	R901	1-216-021-00	METAL GLAZE	68	5%	1/10W
R540	1-216-073-00	METAL GLAZE	1 OK	5%	1/10W	R902	1-216-021-00	METAL GLAZE	68	5%	1/10W
R542	1-216-847-11	METAL GLAZE	1 5 OK	5%	1/16W	R903	1-216-021-00	METAL GLAZE	68	5%	1/10W
R543	1-216-847-11	METAL GLAZE	150K	5%	1/16W	R904	1-216-033-00	METAL GLAZE	220	5%	1/10W
R544	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	R951	1-216-033-00	METAL GLAZE	220	5%	1/10W
R545	1-216-838-11	METAL GLAZE	27K	5%	1/16W	R952	1-216-033-00	METAL GLAZE	220	5%	1/10W
R546 R548 R549	1-216-840-11 1-216-829-11 1-216-857-11	METAL GLAZE METAL GLAZE METAL GLAZE	39K 4.7K 1 M	5% 5% 5%	1/16W 1/16W 1/16W	RV401 RV402 RV501 RV502	1-237-325-11 1-237-328-11 1-230-869-11 1-230-871-11	RES, ADJ, METAL GLAZE 4.7K RES, ADJ, METAL GLAZE 47K RES, ADJ, METAL GLAZE 4.7K RES, ADJ, METAL GLAZE 22K			
R550 R551 R552	1-216-825-11 1-216-825-11 1-216-827-11	METAL GLAZE METAL GLAZE METAL GLAZE	2.2K 2.2K 3.3K	5% 5% 5%	1/16W 1/16W 1/16W	RV503 RV504	1-230-873-11 1-237-575-11 1-230-873-11	RES, ADJ, MET RES, ADJ, MET RES, ADJ, MET	AL GLA	ZE 47K ZE 1.0	K
R553 R554 R555	1-216-825-11 1-216-049-00 1-216-861-11	METAL GLAZE METAL GLAZE METAL GLAZE	2.2K 1K 2.2M	5%	1/16W 1/10W 1/16W	RV801 S701	1-237-143-11	RES, ADJ, METAL GLAZE 10K SWITCH (LIMIT)			
R556 R557 R601	1-216-109-00 1-216-857-11 1-216-841-11	METAL GLAZE METAL GLAZE METAL GLAZE	330K 1 M 47K	5% 5% 5%	1/10W 1/16W 1/16W	S801 S802 S803	1-571-484-11 1-570-204-11 1-570-204-11		OARD(E	>11)	EMAIN PLAY KEY)
R602 R603 R801	1-216-845-11 1-216-841-11 1-216-833-11	METAL GLAZE METAL GLAZE METAL GLAZE	100K 47K 10K	5% 5% 5%	1/16W 1/16W 1/16W	\$804 \$805 \$808	1-570-204-11 1-570-204-11 1-572-003-11	SWITCH, KEY B SWITCH, SLIDE	OARD (144)	
R802 R803 R804	1-216-837-11 1-216-837-11 1-216-837-11	METAL GLAZE METAL GLAZE METAL GLAZE	22K 22K 22K	5% 5% 5%	1/16W 1/16W 1/16W	S901 S902 S903 S904	1-554-911-11 1-571-737-21 1-571-737-21 1-571-737-21	SWITCH, LEAF SWITCH, KEY B SWITCH, KEY B	BOARD BOARD	(REFLO	W)(+)
R805 R806 R807	1-216-833-11 1-216-841-11 1-216-851-11	METAL GLAZE METAL GLAZE METAL GLAZE	1 0K 47K 330K	5% 5% 5%	1/16W 1/16W 1/16W	S905 S906 S907	1 -571 -737-21 1 -571 -737-21 1 -571 -737-21	SWITCH, KEY B SWITCH, KEY B SWITCH, KEY B	BOARD	(REFLO	N) (-)
R808 R809 R810 R811	1-216-041-00 1-216-025-00 1-216-827-11 1-216-097-00	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	470 100K 3.3K 100K	5% 5% 5% 5%	1/10W 1/10W 1/16W 1/10W	X301 X801 X851	1-567-737-11 1-577-064-11 1-567-196-11	VIBRATOR, CRY VIBRATOR, CHI OSCILLATOR, C	P CERA		

ACCESSORY & PACKING MATERIAL

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1-463-691-11 (US,Canadian)...ADAPTOR, AC (AC-930A)
1-463-700-11 (UK).........ADAPTOR, AC (AC-930A)
1-463-702-11 (E)........ADAPTOR, AC (AC-950W)
1-463-705-11 (AEP,FRENCH)...ADAPTOR, AC (AC-930AEP)
1-463-968-11 (US)......ADAPTOR, AC (AC-940)
 1-526-565-00
                   (E).....AC PLUG ADAPTOR
 1-528-297-11
                   (US, Canadian, UK, E).. BATTERY PACK (BP-2EX)
 1-528-297-21
                   (AEP, FRENCH) ..... BATTERY PACK (BP-2EX)
 1-555-658-21
                   CORD, CONNECTION
                   CORD, CONNECTION
 1-575-145-11
 3-750-539-11
                   (Canadian, AEP, FRENCH, UK, E) ... MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE)
 3-750-539-21
                   (US)......MANUAL, INSTRUCTION (ENGLISH)
(AEP).....MANUAL, INSTRUCTION (GERMAN,ITALIAN,DUTCH,SWEDISH)
 3-750-539-41
 4-920-407-01
                   (US, Canadian, E)...BAG, PROTECTION
 4-926-173-01 CASE, CARRYING
*4-926-192-01 CUSHION (UPPER)
 4-926-193-01
                   (US, Canadian, E)... CUSHION (LOWER)
*4-932-701-01
                   (AEP, FRENCH, UK) ... CUSHION (LOWER)
                   (US, Canadian)...INDIVIDUAL CARTON
*4-926-194-01
                   (E).....INDIVIDUAL CARTON (AEP).....INDIVIDUAL CARTON
*4-926-199-01
*4-932-702-01
*4-932-704-01 (FRENCH, UK)....INDIVIDUAL CARTON
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